

REMARKS

The present amendment is in response to the Office Action dated June 21, 2004. Claims 1-17 are now present in this case. Claim 1 has been amended.

The applicants wish to express their appreciation to the Examiner for the telephone conference with the applicants' attorney on August 25, 2004. As discussed in that telephone conference, the reference cited in the office Action (U.S. Patent No. 6,447,266 B1 to Asar) is directed to a video camera interface that captures video images of a printed circuit board for quality assurance analysis. Asar is video camera hardware interface invention. In contrast, the claimed invention is a software invention that operates between the operating system software and video driver software. (See, for example, Figure 32.)

Claim 1-17 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,477,266 B1 to Asar. The applicants respectfully disagree with the Examiner's assessment of Asar and its applicability to the claimed invention.

The present invention is directed to techniques for what amounts to reserving a specific region of a video display screen for the exclusive use of authorized software and does not permit the display of any data in that reserved region by any other software, including the operating system.

In contrast, Asar allows an administrator to select a portion of a captured video image for subsequent analysis. However, the image capture process and subsequent analysis does not require or even suggest the reservation of a specific region of a video display screen for the exclusive use of authorized software. Furthermore, Asar does not teach or suggest any technique that operates outside the native operating system executing on the computer. As will be discussed in greater detail below, Asar uses the term "mask," but the mask is simply the selected outline of the image for analysis and is not related to any reserved display space on the video screen.

The applicants have amended claim 1 in accordance with the Examiner's suggestion to more clearly define code associated with a native operating

system and code independent of the operating system. Those skilled in the art will appreciate that conventional application programs execute under control of the operating system. The application program often provides data to the operating system control code to generate output data, such as data for video display. In the context of the present invention, the software executing under control of the operating system may typically utilize an application program interface (API) as an entry point into a graphics display interface (GDI), which is operating system software. The GDI provides data and instructions on what will be written to the video display screen, including the placement of various objects on the video display as well as the sequence in which objects will be displayed. This includes the placement of one object over another, such as might occur with a pop-up window or a message window. The GDI passes these instructions to video driver software, which is typically unique to the specific hardware interface coupled to the video display. The software driver converts the instructions to data for pixels in the display.

With respect to claim 1, the display source utilizing the native operating system, as described above, is characterized as an "unauthorized display source." Claim 1 recites *inter alia* "generating in a display region mask that defines a display area of the video display system" and does so under control of code that is independent of the native operating system. This means that the code that generates the display mask region to define display area of the video display system does not rely on the API and GDI that may be provided by code executing under control of the operating system. The generated display region mask is associated with an authorized display source and prohibits the unauthorized display source (e.g., the software code that utilizes the native operating system) from displaying data within the defined display area of the video display system. Asar does not ever teach or suggest any code that operates independently of the native operating system. Asar provides no teaching or even suggestion that anything other than a native operating system is used to display all graphics data. As stated in Asar at column 17, lines 4-8, standard graphics components such as those provided by Microsoft Windows operating system or other graphical user interface libraries can

be used. Asar further states that no particular imaging software routines are preferred and no detailed description for such routines are necessary with the selection of "appropriate image processing software routines for performing the functions described herein being strictly a matter of design choice." (See column 17, lines 27-33.) Thus, Asar discloses the use of conventional operating systems and conventional image processing software. Asar states, at column 16, lines 45-46, that the functions of the image control system software could be written to provide its own graphic controls rather than utilizing graphic command and control functionality provided by Windows. However, the graphic controls referred to in Asar are buttons, knobs, controls, etc. on the display and not to the underlying graphics driver or graphics adapter (*i.e.*, the hardware interface that provides the video and synchronization signals for video monitor). Nothing in Asar suggests operation independent of the operating system. Accordingly, claim 1 is clearly allowable over Asar.

Asar discloses a vision comparison inspection system in which a previously tested and certified printed circuit board is visually compared with an untested printed circuit board. By switching back and forth between the image of the certified printed circuit board and the untested printed circuit board, a user may discern defects in the untested circuit board.

It appears that the Office Action incorrectly equates terminology in Asar as teaching the claimed invention based solely on a match of selected words rather than on the meaning of the words within the context of the specification and the claims. For example, Asar uses the term "mask" to define the selected part of the captured image of a printed circuit board that will be shown on the video display. Figures 9-23 of Asar illustrate this process. The figures show the entire captured image as a thumbnail image in a viewing area 258. (See column 17, lines 34-40.) Typically, the captured image includes not only the entire printed circuit board, but extraneous parts of an assembly line. The administrator defines a mask that outlines the printed circuit board alone. This process is described in column 18, lines 6-40 where the cursor is positioned in one corner of the printed circuit board and the

mouse manipulated using a "drag-and-drop" operation to move to the opposite corner of the printed circuit board to define a mask 274, as illustrated in Figure 10. Thus, the mask in Asar defines a portion of a captured image that will be analyzed. The mask is associated with the captured image and is not associated with a specific portion of the video display.

In contrast, the mask described in the specification and recited in the claims of the present invention are defined on the basis of a particular location on the display screen irrespective of any image that may be displayed on the display screen. The region of the display screen defined by the mask is allocated to a particular application and will not permit any other application, such as those executed under control of the operating system, to display anything in that defined region of the display. The "mask" in Asar is related to a specific image that is shown on the display screen. The "mask" defined in the present invention is related to a specific region defined on the display screen irrespective of any image that may be shown on the display screen. Thus, although the term mask is used in Asar and in the present invention, the masks are structurally different and unrelated.

Similarly, the Office Action incorrectly equates the term "filter" in Asar with the filter recited in claims 3, 9 and 14 of the present invention. The Office Action states that Asar discloses a display filter at column 14, lines 54-57. A review of that portion of Asar shows that a monochrome video camera captures three sequences of monochrome images using red, green, and blue filters. The single color images are mixed to form a composite color image. Thus, the "filter" in Asar is a piece of colored glass placed in front of a video camera. In sharp contrast, the term filter as recited in claim 3, for example, refers to a process of modifying digital data using a display filter "intermediate the graphics device interface and the video display driver to filter data from the first application intended for the display area defined by the display region mask." The graphics device interface (GDI) and the display driver are both software components and the "filter" in claims 3, 9 and 14 intercepts the digital data from the GDI and modifies (*i.e.*, filters) the GDI data. It is inappropriate to equate a piece of colored glass in front of a video camera to a method that

processes digital data as recited in claim 3. The fact that the word "filter" appears in Asar does not make it the equivalent of the filter recited in claim 3.

With respect to claim 2, the Office Action states that Asar teaches the recited method. This is incorrect. The Office Action is unclear as to what process in Asar may be considered the equivalent of first and second applications or what process in Asar prevents the first application from being displayed within the masked region of the video display. However, it appears that the Office Action is defining an administrative control software module as the first application and a user control software module as the second application. It should be noted that the administrative control software module and the user control software module are not operating at the same time. The administrative control module is used to define the mask in an administrative session while the user control module is executing during the visual inspection process in a subsequent user session. (See column 18, lines 42-50.) Thus, the so-called "first and second applications referred to in the Office Action are not active at the same time and no technique is required to prevent one application from overriding the other application, as recited in claim 2.

Another distinct difference between Asar and the claimed invention relates to the area defined by a mask. As discussed above, the mask in Asar is defined in the administration control session to select which part of the overall image will be included in the primary display. However, the mask in Asar defines a part of a captured video image while the mask in claim 2 defines a part of the video display screen. The mask in Asar does not define a specific region of the display area of the video display system, as recited in claim 2. Furthermore, Asar does not teach or suggest "associating the generated display region mask with the second application," as recited in claim 2. As noted above, Asar is defining a portion of captured image data using a so-called "mask." However, the mask defines a portion of the image on the display, but does not define a region of the video display screen itself.

In addition, Asar does not teach or suggest "receiving data for the first application from a graphics device interface associated with a native operating system" and "modifying a portion of the received data intended for the display area

defined by the display region mask to prevent the data from the first application from being displayed in the display are defined by the display region mask" as recited in claim 2. The Office Action appears to equate a pop-up window, shown in Figure 22, as equivalent to a modified display as recited in claim 2. This is not correct. Asar does not teach or suggest any technique that utilizes control software other than conventional operating system components. As discussed above, Asar discloses a system utilizing the graphics capabilities of an operating system, such as Windows. Asar further teaches the use of conventional software, preferably Visual C++ by Microsoft. Those skilled in the art will recognize that such programs typically utilize APIs to interface with conventional Window components, including the GDI. Thus, nothing in Asar suggests intercepting data from the GDI and modifying a portion of the intercepted data intended for the masked region on the video display. The pop-up menu shown in Figure 22 can be readily generated using conventional Windows technology. This does not teach or suggest the interception of data from the GDI and the modification of the data, as recited in claim 2.

Furthermore, Asar does not teach or suggest "transferring the data, including the modified portion, to a display driver associated with the video display system." As noted above, Asar never suggests any association of a mask with a particular area of the video display and does not modify data received from the GDI that is intended for the defined display area. The mask in Asar amounts to cropping a photograph where only a particular portion of the photograph is desired. The mask recited in claim 2 defines a particular area of the video display and data from the GDI intended for display in that defined area is intercepted and modified. Asar does not teach or suggest intercepting calls from a graphics device interface and modifying those to prevent data from a first application from being displayed in the display area defined by the mask. Asar teaches the use of conventional graphics and operating system functionality and never even considers device drivers, graphics display adapters or the interception and modification of data from a graphics device interface associated with the native operating system. Thus, claim 2 is clearly allowable over

Asar. Claims 3-8 are also allowable in view of the fact that they depend from claim 2, and further in view of the recitation in each of those claims.

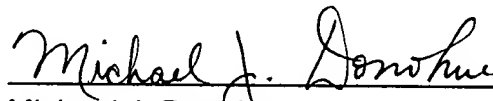
Claim 8 is a system claim that is clearly allowable over Asar. Claim 8 recites *inter alia* "a programming interface to provide a routine to create a display region mask that defines a masked display area of the video display system." As noted above with respect to claim 2, Asar creates a "mask" that defines part of an image on the display, but does not define any specific region of the video display itself. Furthermore, claim 8 recites a display filter to "intercept function calls from a graphics device interface associated with a native operating system" as well as clipping "a portion of the received data intended for the masked display area to prevent the data from the first application from being displayed in the masked display area" in the event that the display filter detects that the intercepted function call from the first application is specifying the transmission of data to the masked display area. As discussed above, Asar does not ever teach or suggest intercepting function calls from a graphics display interface. There is no discussion whatever of a graphics device interface or the interception of function calls to the graphics device interface or the filtering of intercepted function calls to clip a portion of data intended for the masked region of the video display to thereby prevent the data from the first application from being displayed in the masked display area, as recited in claim 8. Asar does not even consider a graphics device interface or intercepting function calls. Accordingly, claim 8 is clearly allowable over Asar. Claims 9-11 are also allowable in view of the fact that they depend from claim 8, and further in view of the recitation in each of those claims.

Claim 12 is a computer readable media claim. The display mask region in claim 12 defines a display area of the video display system. The mask of Asar defines a portion of the video image on the display, but does not define any region of the display itself. Claim 12 recites receiving data for a first application from a graphics display device associated with a native operating system and clipping a portion of the data intended for the display area defined by the display region mask. As noted above, Asar does not teach or suggest the interception of data from a

graphics device interface associated with a native operating system. Asar describes utilizing conventional technology, such as the standard graphics components from Microsoft Windows operating systems. Asar does not teach or suggest intercepting these calls and clipping a portion of the data to prevent data from being written to a specifically defined region of the video display, as recited in claim 12. Accordingly, claim 12 is clearly allowable over Asar. Claims 13-17 are also allowable in view of the fact that they depend from claim 12, and further in view of the recitation in each of those claims.

It is now believed that all claims are in condition for allowance. Reconsideration of the subject application and its allowance are kindly requested. If questions remain regarding this application, the Examiner is invited to contact the undersigned at (206) 628-7640.

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